REMARKS

Claims 1-33 are all the claims pending in the application. Claims 19, 26 and 32 are allowed. Claims 2, 5, 10, and 13 stand objected to only as being dependent upon a rejected base claim, and would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims. Therefore, claims 2, 5, 10, and 13 have been rewritten in independent form. In addition, since the allowability of claim 22 has been withdrawn, it has been rewritten in dependent form. Claims 1, 3, 4, 6-9, 11, 12, 14-18, 20-25, 27-31 and 33 stand rejected on prior art grounds.

I. The Prior Art Rejections

Claims 1, 3, 4, 6-9, 11, 12, 14-18, 20-25, 27-31 and 33 stand rejected under 35 U.S.C. §102(b) as being anticipated by Greene (3,921,003). Applicants respectfully traverse this rejection because Greene does not teach a control device that includes an input/output port through which the data of the shift registers can be observed. Instead in Greene, the shift registers 364, 365 output directly to decoders 367, 368 and the "control device" 362, 363 (as argued in the Office Action) does not provide any output through which the values within the shift registers could be observed. As an aside, Applicants note that the samplers 362, 363 cannot be the claimed "control devices" as defined in the claims because the samplers 362, 363 are not connected to the claimed "wiring loop." As explained in greater detail below, Greene does not teach or suggest that the "control device" (as claimed) "includes an output input/output port accessible from outside said circuit . . . to permit said data of said shift register to be observed outside said circuit through said input/output port without altering logical values of said data of said shift register" as defined by all rejected independent claims. The same is true regardless of whether the samplers 362, 363, counter 370, switches 371, 372 are considered some form of "control device", because none of these devices include any form of output that would provide access to data that resides within the shift registers. The only data within the shift register that

passes through the switches 371, 372 immediately returns to the shift registers 364, 365. This data is not output from the switches 371, 372 of Greene. Thus, none of the samplers 362, 363, counter 370, switches 371, 372 or any other devices that could provide any form of "control" have opportunity to output the data that is within the shift registers.

Further, there is a disconnect on what is meant by "outside the circuit" between the claims and what the rejection proposes as outside the circuit. The context the rejection chooses is where the circuit is just the shift register, and outside the circuit is the "next" logic that the shift register drives. The prior art that is shown is that of a coin sorter where there is a shift register wired to shift circularly which is observed by the next logic block (367) whose function is to observe the contents of the shift register and output signals identifiying the type of coin. In Greene, contents of the shift register are not observed outside the function/assembly/system, and in fact the claimed invention would be useful to the cited prior art by providing observability to the contents of the circulating shift register outside the function/assembly when the function/assembly did not correctly identify the nickel, dime or quarter (e.g., when decoder 367 fails due to unforeseen circumstances).

Paragraph 3 of the rejection argues that devices 391,392,393 record the data. These devices store only the logical result (ie nickel, dime,quarter) of processing the data that is in the shift register rather than the contents of the shift register itself. The claimed invention starts the data itself to allow it to be examined.

Paragraph 4 of the rejection proposes having a write device (362) change one or more bits of said shift register. The operation of switch 371 prohibits the alteration of one or more bits of the shift register. It permits only the complete loading of the shift register (and the distruction of all previous data) or the circular operation of the shift register with no alteration. Alteration of single bits in the shift register would require control of switch 371 by more complex logic than counter 370 which detects only the last sample.

Paragraph 5 of the rejection says that there are "observing wires" shown in Figure 3. This is the same issue as in paragraph 2. The claimed invention would be understood to define observation outside the function/assembly/system (for the purposes of diagnosing failures in 10/604,550

operation) rather than observation by the next logic block where the data is compressed/condensed before it is observable outside the function/assembly/system.

Paragraph 6 of the rejection states that the shift register selector is seen in sampler 362, 363. However, there is no selection of shift registers possible as both operate all the time in parallel, they are clocked by the same clock (from clock block 366), the controls to the wire loop (371,372) are wired together, and the reset to the shift registers are common. They operate in parallel and cannot be individually selected.

Paragraph 7 states that Greene discloses "directing said data to a location external to said shift register." This is again the issue of paragraph 2. Secondarily, the rejection states that 386-388 contain the data of the shift register when in fact they contain the processed answer of "decoder" 367,368 (nickel, dime, quarter).

Paragraph 8 of the rejection states that Greene discloses "altering data occurs from the output of the sensors 350, 355". As explained in paragraph 4 above, it is impossible with this circuit to individually alter bits. The entire shift register contents must be reset and a new set of data inputted via sensors 350 and 355. Greene cannot alter a single bit in the rotating shift register and leave the contents unchanged.

To further illustrate the utility of the invention, it is useful to understand how the claimed invention would improve the coin sorter described in Greene. In Greene, a coin is optically scanned as it rolls down a channel and the data from the scan of both sides of the coin are put into 2 shift registers. These registers are then made to circulate while the "decoder" examines the broadside data and compares it with the signatures of known coins. If a signature is found, then the result (known "outside" the system) is that the coin is identified. Suppose a valid coin were examined but the "decoder" (367-368) said that it was not a valid coin. The claimed invention would be able to examine the data ("outside" the system) and see what it was, and potentially alter a bit and see if the "decoder" would identify it as a valid coin. Perhaps the altered bit might correspond to a coin with a bit of dirt or a letter chipped off of a worn coin. From this, the claimed invention would be able to deduce how to improve the "decoder" such that it would recognize worn coins. Without the claimed invention there is no way from outside the system to

deduce what went wrong when trying to improve system performance.

Therefore, since Greene does not teach a control device that includes an input/output port through which the data of the shift registers can be observed, the rejection should be withdrawn. In Greene, the shift registers 364, 365 output directly to decoders 367, 368 and the sampler 362, 363 does not provide any control or output through which the values within the shift registers could be observed. The same is true regardless of whether the samplers 362, 363, counter 370, switches 371, 372 are considered some form of "control device", because none of these devices include any form of output that would provide access to data that resides within the shift registers. The only data within the shift register that passes through the switches 371, 372 immediately returns to the shift registers 364, 365. This data is not output from the switches 371, 372 of Greene. Thus, none of the samplers 362, 363, counter 370, switches 371, 372 or any other devices that could provide any form of "control" have opportunity to output the data that is within the shift registers.

Therefore, Greene does not teach or suggest that the "control device" (as claimed) "includes an input/output port accessible from outside said circuit . . . to permit said data of said shift register to be observed outside said circuit through said input/output port without altering logical values of said data of said shift register" as defined by independent claims 1 and 7, and similarly defined by claims 15, 21, and 28, and such claims are therefore patentable. Further, dependent claims 3, 4, 6, 8, 9, 11, 12, 14, 16-18, 20, 22-25, 27, 29-31, and 33 are similarly patentable, not only by virtue of their dependency from a patentable independent claim, but also by virtue of the additional features of the claims that they define, as discussed above. In view of the foregoing, the Examiner is requested to reconsider and withdraw this rejection.

II. Formal Matters and Conclusion

In view of the foregoing, Applicants submit that claims 1-33, all the claims presently pending in the application, are patentably distinct from the prior art of record and are in condition

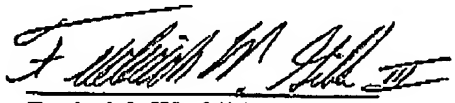
for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary.

Please charge any deficiencies and credit any overpayments to Attorney's Deposit Account Number 09-0456.

Respectfully submitted,

Dated: 4-7-06



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